

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C. 20231  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 28 March 2000 (28.03.00)	
International application No. PCT/US99/16228	Applicant's or agent's file reference RCA 88649
International filing date (day/month/year) 20 July 1999 (20.07.99)	Priority date (day/month/year) 20 July 1998 (20.07.98)
Applicant LEWIS, Debbie, Indira et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
18 February 2000 (18.02.00)

☐ in a notice effecting later election filed with the International Bureau on:  
\_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer Nestor Santesso</p> <p>Telephone No.: (41-22) 338.83.38</p>
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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> :

G11B 19/00

A2

(11) International Publication Number:

WO 00/04538

(43) International Publication Date:

27 January 2000 (27.01.00)

(21) International Application Number: PCT/US99/16228

(22) International Filing Date: 20 July 1999 (20.07.99)

(30) Priority Data:

60/093,424

20 July 1998 (20.07.98)

US

(71) Applicant (for all designated States except US): THOMSON CONSUMER ELECTRONICS, INC. [US/US]; 10330 North Meridian Street, Indianapolis, IN 46290 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): LEWIS, Debbie, Indira [JM/US]; 615 Ivy Chase Lane, Norcross, GA 30092 (US). MILLER, Robert, Howard [US/US]; 2900 West 93rd Street, Leawood, KS 66206-1811 (US).

(74) Agents: TRIPOLI, Joseph, S. et al.; Thomson Multimedia Licensing Inc., P.O. Box 5312, Princeton, NJ 08543 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

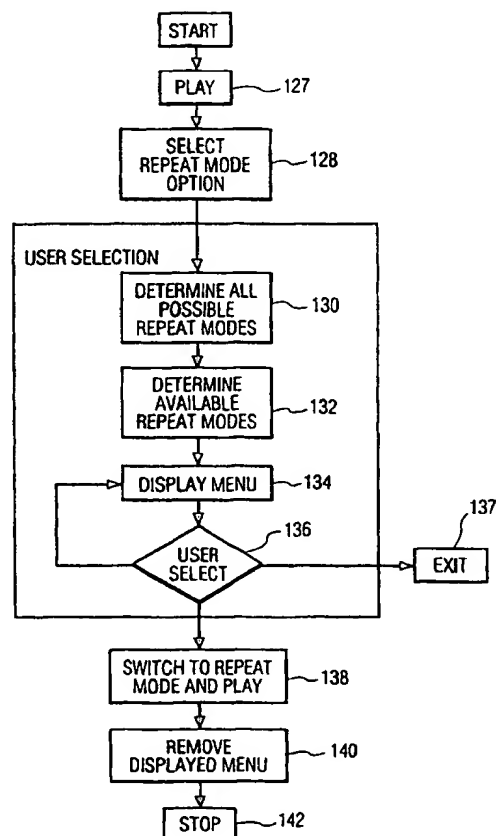
**Published**

Without international search report and to be republished upon receipt of that report.

(54) Title: DIGITAL VIDEO APPARATUS USER INTERFACE

## (57) Abstract

A method for controlling a system for processing stored information stored on a storage medium, the system including a plurality of playmodes (PMs) representing respectively different processing sequences, includes the following steps. A sequence represented by one of the plurality of PMs is played back during play mode of operation. An opportunity is provided to a user, during the play mode of operation, to select a PM from among the plurality of PMs. Then the sequence represented by the selected PM is played back during the play mode of operation. Apparatus for processing information, in this manner includes playback circuitry for retrieving information from the storage medium during a play mode of operation in one of the plurality of PMs. A user control device receives user input. A control means conditions the playback circuitry to assume a play mode of operation, select one of the plurality of PMs during the play mode of operation in response to the user input, and change to retrieve the selected one of a plurality of PMs during the play mode of operation.



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
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DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 January 2000 (27.01.2000)

PCT

(10) International Publication Number  
**WO 00/04538 A3**

(51) International Patent Classification<sup>7</sup>: **G11B 27/00,**  
H04N 5/92, 5/85

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93rd Street, Leawood, KS 66206-1811 (US).

(21) International Application Number: **PCT/US99/16228**

(22) International Filing Date: **20 July 1999 (20.07.1999)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data:  
60/093,424 **20 July 1998 (20.07.1998) US**

(71) Applicant (for all designated States except US): **THOM-  
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(72) Inventors; and

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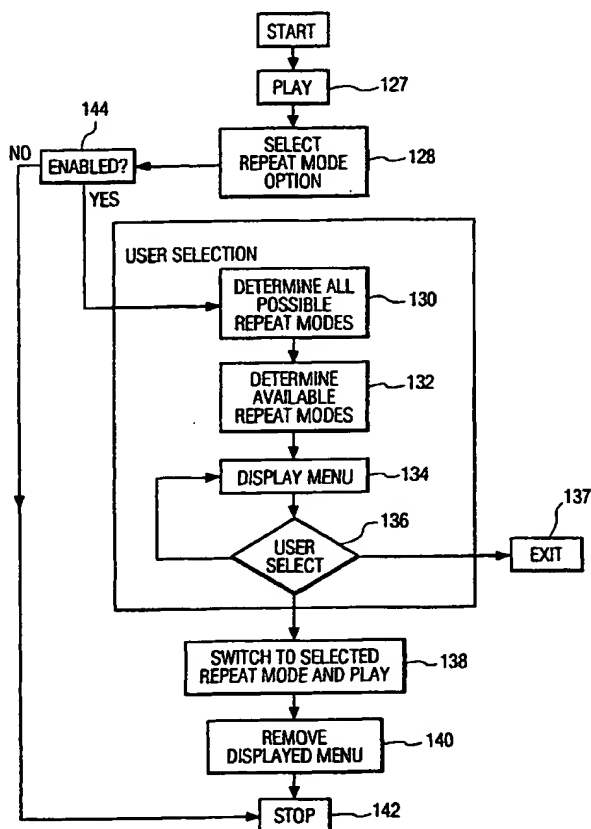
(74) Agents: **TRIPOLI, Joseph, S. et al.**; Thomson Multime-  
dia Licensing Inc., P.O. Box 5312, Princeton, NJ 08543  
(US).

(81) Designated States (national): AE, AL, AM, AT, AU, AZ,  
BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE,  
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD,  
MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,  
SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ,  
VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM,  
AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT,  
BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,

[Continued on next page]

(54) Title: **DIGITAL VIDEO APPARATUS USER INTERFACE**



(57) Abstract: A method for controlling a system for processing stored information stored on a storage medium, the system including a plurality of playmodes (PMs) representing respectively different processing sequences, includes the following steps. A sequence represented by one of the plurality of PMs is played back during play mode of operation. An opportunity is provided to a user, during the play mode of operation, to select a PM from among the plurality of PMs. Then the sequence represented by the selected PM is played back during the play mode of operation. Apparatus for processing information, in this manner includes playback circuitry for retrieving information from the storage medium during a play mode of operation in one of the plurality of PMs. A user control device receives user input. A control means conditions the playback circuitry to assume a play mode of operation, select one of the plurality of PMs during the play mode of operation in response to the user input, and change to retrieve the selected one of a plurality of PMs during the play mode of operation.

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OCT 17 2001

Technology Center 2600

WO 00/04538 A3



NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:  
20 September 2001

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

9. Apparatus for processing data units stored on a storage medium according to a particular playback sequence, the apparatus comprising:

A playback circuitry ~~(26,27,28,30)~~ for accessing and processing data units  
5 stored on the storage medium during a PLAY mode of operation;

A user control device ~~(41)~~ for receiving user input; and

A control unit ~~(40)~~, coupled to the playback circuitry and the user control device, for conditioning the playback circuitry to activate the PLAY mode of operation and process the data units in a particular playback sequence in response to user selection of one of a plurality of playmodes, <sup>wherein</sup> ~~characterized in~~  
10 ~~that~~

the control unit provides to a user during the PLAY mode of operation an opportunity to select from among the plurality of playmodes, the plurality of playmodes including a standard playmode representing a default sequence, a  
15 random playmode representing a random sequence and programmed playmode representing a sequence specified by a user, without interrupting the PLAY mode of the playback circuitry, and, in response to user selection of a new playmode, changing the playback sequence of the data units in accordance with the newly selected playmode.

20  
A 10. The apparatus of claim 9, <sup>comprising</sup> ~~characterized by~~ an on-screen display control ~~(35)~~ coupled to the control unit ~~(40)~~, the on-screen display control providing a menu ~~(110)~~ representing the plurality of playmodes allowing the user to select one of the plurality of playmodes while watching a playback of  
25 a current sequence of data units in a background portion of the video display.

11. The apparatus of claim 9, <sup>wherein</sup> ~~characterized in that~~ the control unit determines whether a mode of operation enabling selection of one of the plurality of playmodes during the PLAY mode of operation is enabled; and provides an  
30 opportunity to select a new playmode without interrupting the PLAY mode only if the mode of operation enabling modification of the plurality of playmodes during the PLAY mode of operation is enabled.

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>RCA 88649</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 99/ 16228</b>	International filing date (day/month/year) <b>20/07/1999</b>	(Earliest) Priority Date (day/month/year) <b>20/07/1998</b>
Applicant <b>THOMSON CONSUMER ELECTRONICS, INC. et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☒ because this figure better characterizes the invention.

7

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No

T/US 99/16228

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G11B27/00 H04N5/92 H04N5/85

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G11B H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 847 197 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 10 June 1998 (1998-06-10) column 9, line 7 - line 15	1, 14
Y	column 15, line 27 - line 33 ---	2, 3, 13, 15
Y	PATENT ABSTRACTS OF JAPAN vol. 199, no. 706, 30 June 1997 (1997-06-30) & JP 09 037198 A (MATSUSHITA ELECTRIC IND CO), 7 February 1997 (1997-02-07) abstract ---	2, 3, 13, 15
A	EP 0 724 264 A (KABUSHIKI KAISHA TOSHIBA) 31 July 1996 (1996-07-31) column 1, line 3-9 --- -/--	1, 13, 14

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

15 October 1999

Date of mailing of the international search report

25/10/1999

Name and mailing address of the ISA

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Authorized officer

Chaumeron, B



## INTERNATIONAL SEARCH REPORT

International Application No

T/US 99/16228

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PATENT ABSTRACTS OF JAPAN vol. 10, no. 348, 22 November 1986 (1986-11-22) &amp; JP 61 148571 A (UINGU KK), 7 July 1986 (1986-07-07) abstract</p> <p>-----</p>	1, 13, 14

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

T/US 99/16228

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0847197 A	10-06-1998	DE 69602372 D	10-06-1999
		CN 1197574 A	28-10-1998
		EP 0920203 A	02-06-1999
		WO 9713364 A	10-04-1997
		US 5923869 A	13-07-1999
		CN 1212812 A	31-03-1999
		EP 0888018 A	30-12-1998
		WO 9732437 A	04-09-1997
JP 09037198 A	07-02-1997	NONE	
EP 0724264 A	31-07-1996	AT 174149 T	15-12-1998
		CA 2168327 A	31-07-1996
		CN 1134583 A	30-10-1996
		DE 69601039 D	14-01-1999
		DE 69601039 T	24-06-1999
		EP 0872839 A	21-10-1998
		JP 2747268 B	06-05-1998
		JP 8273304 A	18-10-1996
		JP 2857126 B	10-02-1999
		JP 10074379 A	17-03-1998
		JP 2875237 B	31-03-1999
		JP 10074380 A	17-03-1998
		US 5870523 A	09-02-1999
JP 61148571 A	07-07-1986	NONE	

## PATENT COOPERATION TREATY

EL 667108 79 US

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

OCT 2 2000

To:

TRIPOLI, J.  
THOMSON MULTIMEDIA LICENSING INC.  
P.O. Box 5312  
Princeton, New Jersey 08543-5312  
ETATS-UNIS D'AMERIQUE

PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 71.1)

Date of mailing  
(day/month/year) 19.10.2000

Applicant's or agent's file reference  
RCA 88649 *ppk*

## IMPORTANT NOTIFICATION

International application No.  
PCT/US99/16228

International filing date (day/month/year)  
20/07/1999

Priority date (day/month/year)  
20/07/1998

Applicant  
THOMSON LICENSING S.A. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

## 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized officer

Slater, S

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## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RCA 88649	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/16228	International filing date (day/month/year) 20/07/1999	Priority date (day/month/year) 20/07/1998
International Patent Classification (IPC) or national classification and IPC G11B27/00		
Applicant THOMSON LICENSING S.A. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  18/02/2000	Date of completion of this report  19.10.2000
Name and mailing address of the International preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Chaumeron, B  Telephone No. +49 89 2399 2662 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US99/16228

## I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

### Description, pages:

2-8 as originally filed

1,1a as received on 31/08/2000 with letter of 29/08/2000

### Claims, No.:

1-14 as received on 31/08/2000 with letter of 29/08/2000

### Drawings, sheets:

1/7-7/7 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

# **INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No. PCT/US99/16228

## **V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

### **1. Statement**

Novelty (N)	Yes:	Claims	1-14
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-14
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-14
	No:	Claims	

### **2. Citations and explanations**

**see separate sheet**

## **VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1.) Reference is made to the following document:

D1: EP-A-0847197

2.) The aim of the invention is to allow the user to dynamically change the disc's player mode (i.e. without having to stop playback of title) during playback.

D1 discloses an apparatus allowing a user to reproduce a sequence of video and audio components (called a scenario) of a multimedia source data using a display.

The apparatus allows the possibility of choosing one scenario among a plurality of scenarios. It is also possible to change scenarios while playback of one scenario is in progress. However this document does not mention the possibility of changing a playing mode while the current playing mode is still in progress.

Therefore it is considered that the subject-matter of method claim 1 and the corresponding apparatus claim 9 cannot be derived in an obvious manner from D1.

Thus claims 1 and 9 meet the requirements of novelty and inventive step mentioned in Art. 33 PCT.

Dependent claims 2 to 8 and 10 to 14 also meet as such this requirements.

**Re Item VIII**

**Certain observations on the international application**

The last paragraph of the description leads to a difficulty as to the matter for which protection is sought. It should be deleted according to the PCT Guidelines Section IV, Par. III-4.3a.

09/744112

J002 Rec'd PCT/PTO

1 8 JAN 2001

## DIGITAL VIDEO APPARATUS USER INTERFACE

The present invention relates to a user interface for a digital video apparatus, and in particular, a user interface for a digital video apparatus capable of processing a plurality of data blocks according to a user selected playmode.

Video signal processing systems that utilize storage media having digitally compressed video and audio information recorded thereon can give the user a vast number of options for controlling playback of a video title stored on such a media. One such system that is gaining rapid acceptance comprises a video disc player adapted to process information stored in accordance with the digital video disc (DVD) specification. The information on a DVD formatted disc is recorded as discrete packets of data, in accordance with the applicable video and audio data compression standards, wherein designated packets carry data associated with various data streams, such as alternative video angles, audio tracks, subpicture streams, etc. A disc player reading a DVD formatted disc may be controlled to display certain packets of data and skip over others in this manner, the DVD system can be used to prevent unauthorized access to information on a particular disc as well as seamlessly provide multiple variations of a video title, such as multiple camera angles and story endings, in accordance with user commands.

EP0847197A discloses a device for seamlessly reproducing a bitstream containing noncontinuous system time information. In particular, EP0847197A discloses an authoring system that encodes a multimedia bitstream that can be reproduced according to one scenario selected from a plurality of scenarios. The scenarios can be changed during playback, i.e., in response to user selection of a new scenario a new multimedia scenario is dynamically generated according to the most recently selected scenario. It is also possible to dynamically select and reproduce any one of the plurality of scenarios while reproducing the title content according to a desired scenario.

One useful aspect of the DVD system is that it allows the user to playback the disc contents using one of a plurality of playmodes. DVD formatted discs are generally authored to include one or more video titles,



wherein each video title corresponds to a designated program unit, such as a movie or a television episode. Each video title may in turn be divided into one or more part-of-title units, also called chapters, wherein each chapter corresponds to a predetermined portion of the video title. Under this format, a disc player

5 may be configured to playback the chapters of a particular video title in one of a plurality of playmodes. The available playmodes usually include: 1) standard, wherein the disc player plays the disc in the default sequence, usually from beginning to end; 2) random, wherein the chapters are played back in random order; and 3) program, wherein the chapters are played back in a sequence

10 programmed by the user.

To change a disc player's playmode setting, a user ordinarily must stop disc playback, call up the appropriate player set-up menu, make the necessary

## CLAIMS

1. A method for controlling a system for processing a plurality of data units stored on a storage medium, the system adapted to process a sequence of the data units in accordance with one of a plurality of playmodes (PMs) comprising standard, random and programmed playmodes, the method comprising the steps of:

(A) playing back (127) a sequence of data units according to one of the plurality of playmodes during a PLAY mode of operation, characterized by

(B) providing (134) to a user, during the PLAY mode of operation, an opportunity to select another one of the plurality of playmodes, the plurality of playmodes including a standard playmode representing a default sequence, a random playmode representing a random sequence and programmed playmode representing a sequence specified by a user, without interrupting playback of a current sequence of data units, and

(C) in response to user selection of a new playmode, changing (138) the playback sequence of the data units in accordance with the newly selected playmode.

2. The method of claim 1, characterized in that step (B) comprises the step of generating (134) an on-screen display overlaid onto a video display which allows the user to select one of the plurality of playmodes while continuing to watch the playback of the data units in a background portion of the video display.

3. The method of claim 2, characterized in that step (B) is preceded by the step of determining (144) whether a mode of operation enabling selection of one of the plurality of playmodes during the PLAY mode of operation is enabled; and

performing steps (B) and (C) only if the mode of operation enabling modification of the plurality of playmodes during the PLAY mode of operation is enabled.

4. The method of claim 3, characterized in that the step of determining whether user modification of a playmode is enabled is preceded by the step of determining (127,128) whether the system is in the PLAY mode of operation.

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5. The method of claim 4, characterized in that:  
the system comprises a DVD player (30) and the storage medium comprises a DVD disk;  
the DVD disk includes a plurality of chapters; and  
10 the plurality of playmodes represent respectively different sequences of chapters.

6. The method of claim 1, characterized in that step (B) comprises the steps of:

15

determining (130) the maximum number of the plurality of playmodes which may be performed with the storage medium;

determining (132) which of the number of the maximum number of the plurality of playmodes are actually possible with the storage medium;

generating (134) an on-screen menu displaying the maximum number of  
20 the plurality of playmodes, and which of the maximum number of the plurality of playmodes are actually possible .

7. The method of claim 6, characterized in that step (B) further comprises, after the generating step, a step of allowing (136) the user to select  
25 from among the plurality of playmodes actually possible on the storage medium.

8. The method of claim 1, characterized in that step (C) is preceded by the step of allowing the user to select whether the newly selected playmode will be effective for all future playbacks or only the current playback.

9. Apparatus for processing data units stored on a storage medium according to a particular playback sequence, the apparatus comprising:

5 playback circuitry (26,27,28,30) for accessing and processing data units stored on the storage medium during a PLAY mode of operation;  
a user control device (41) for receiving user input; and  
a control unit (40), coupled to the playback circuitry and the user control device, for conditioning the playback circuitry to activate the PLAY mode of operation and process the data units in a particular playback sequence in  
10 response to user selection of one of a plurality of playmodes, characterized in that

the control unit provides to a user during the PLAY mode of operation an opportunity to select from among the plurality of playmodes, the plurality of playmodes including a standard playmode representing a default sequence, a  
15 random playmode representing a random sequence and programmed playmode representing a sequence specified by a user, without interrupting the PLAY mode of the playback circuitry, and, in response to user selection of a new playmode, changing the playback sequence of the data units in accordance with the newly selected playmode.

20 10. The apparatus of claim 9, further characterized by an on-screen display control (35) coupled to the control unit (40), the on-screen display control providing a menu (110) representing the plurality of playmodes allowing the user to select one of the plurality of playmodes while watching a playback of  
25 a current sequence of data units in a background portion of the video display.

11. The apparatus of claim 9, characterized in that the control unit determines whether a mode of operation enabling selection of one of the plurality of playmodes during the PLAY mode of operation is enabled; and provides an  
30 opportunity to select a new playmode without interrupting the PLAY mode only if the mode of operation enabling modification of the plurality of playmodes during the PLAY mode of operation is enabled.

12. The apparatus of claim 9, characterized in that the playback circuitry comprises means for accessing and processing data from a DVD disk and the storage medium comprises a DVD disk, wherein the DVD disk includes a plurality of chapters; and the plurality of playmodes represent respectively different sequences of chapters.

13. The apparatus of claim 9, characterized in that control unit is adapted to determine the maximum number of the plurality of playmodes which may be performed with the storage medium, to determine which of the number of the maximum number of the plurality of playmodes are actually possible with the storage medium, and to provide an on-screen menu displaying the maximum number of the plurality of playmodes and which of the maximum number of the plurality of playmodes are actually possible.

14. The apparatus of claim 9, characterized in that the control unit provides an on-screen display to allow the user to select whether the newly selected playmode will be effective for all future playbacks or only the current playback.



## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference RCA 88649	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/16228	International filing date (day/month/year) 20/07/1999	Priority date (day/month/year) 20/07/1998
International Patent Classification (IPC) or national classification and IPC G11B27/00		
Applicant THOMSON LICENSING S.A. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 18/02/2000	Date of completion of this report 19.10.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Chaumeron, B Telephone No. +49 89 2399 2662 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US99/16228

## I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

### Description, pages:

2-8	as originally filed			
1,1a	as received on	31/08/2000	with letter of	29/08/2000

### Claims, No.:

1-14	as received on	31/08/2000	with letter of	29/08/2000
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### Drawings, sheets:

1/7-7/7	as originally filed
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2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

# **INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

International application No. PCT/US99/16228

## **V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

### **1. Statement**

Novelty (N)	Yes: Claims 1-14
	No: Claims
Inventive step (IS)	Yes: Claims 1-14
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-14
	No: Claims

### **2. Citations and explanations**

**see separate sheet**

## **VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**



**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1.) Reference is made to the following document:

D1: EP-A-0847197

2.) The aim of the invention is to allow the user to dynamically change the disc's player mode (i.e. without having to stop playback of title) during playback.

D1 discloses an apparatus allowing a user to reproduce a sequence of video and audio components (called a scenario) of a multimedia source data using a display.

The apparatus allows the possibility of choosing one scenario among a plurality of scenarios. It is also possible to change scenarios while playback of one scenario is in progress. However this document does not mention the possibility of changing a playing mode while the current playing mode is still in progress.

Therefore it is considered that the subject-matter of method claim 1 and the corresponding apparatus claim 9 cannot be derived in an obvious manner from D1. Thus claims 1 and 9 meet the requirements of novelty and inventive step mentioned in Art. 33 PCT.

Dependent claims 2 to 8 and 10 to 14 also meet as such this requirements.

**Re Item VIII**

**Certain observations on the international application**

The last paragraph of the description leads to a difficulty as to the matter for which protection is sought. It should be deleted according to the PCT Guidelines Section IV, Par. III-4.3a.

## DIGITAL VIDEO APPARATUS USER INTERFACE

The present invention relates to a user interface for a digital video apparatus, and in particular, a user interface for a digital video apparatus capable of processing a plurality of data blocks according to a user selected playmode.

Video signal processing systems that utilize storage media having digitally compressed video and audio information recorded thereon can give the user a vast number of options for controlling playback of a video title stored on such a media. One such system that is gaining rapid acceptance comprises a video disc player adapted to process information stored in accordance with the digital video disc (DVD) specification. The information on a DVD formatted disc is recorded as discrete packets of data, in accordance with the applicable video and audio data compression standards, wherein designated packets carry data associated with various data streams, such as alternative video angles, audio tracks, subpicture streams, etc. A disc player reading a DVD formatted disc may be controlled to display certain packets of data and skip over others. In this manner, the DVD system can be used to prevent unauthorized access to information on a particular disc as well as seamlessly provide multiple variations of a video title, such as multiple camera angles and story endings, in accordance with user commands.

One useful aspect of the DVD system is that it allows the user to playback the disc contents using one of a plurality of playmodes. DVD formatted discs are generally authored to include one or more video titles, wherein each video title corresponds to a designated program unit, such as a movie or a television episode. Each video title may in turn be divided into one or more part-of-title units, also called chapters, wherein each chapter corresponds to a predetermined portion of the video title. Under this format, a disc player may be configured to playback the chapters of a particular video title in one of a plurality of playmodes. The available playmodes usually include: 1) standard, wherein the disc player plays the disc in the default sequence, usually from beginning to end; 2) random, wherein the chapters are played back in random order; and 3) program, wherein the chapters are played back in a sequence programmed by the user.

To change a disc player's playmode setting, a user ordinarily must stop disc playback, call up the appropriate player set-up menu, make the necessary

## Claims

1. A method for controlling a system for processing stored information stored on  
5 a storage medium, the system including a plurality of playmodes (PMs) representing  
respectively different processing sequences, comprising the steps of:
  - (A) playing back a sequence represented by one of the plurality of PMs  
during play mode of operation;
  - (B) providing to a user, during the play mode of operation, an opportunity  
10 to select a PM from among the plurality of PMs responsive to user input;
  - (C) changing to playing back a sequence represented by the selected PM  
during the play mode of operation.
2. The method of claim 1, wherein step (B) comprises the step of generating an  
15 on-screen display overlaid onto a video display which allows the user to select one of a  
plurality of PMs while continuing to watch the program playback in a background  
portion of the video display.
3. The method of claim 2, wherein step (C) comprises the step of removing the  
20 on-screen display overlaid on the video display.
4. The method of claim 3, wherein step (B) is preceded by the step of determining  
whether a mode of operation enabling selection of one of the plurality of PMs during  
play mode of operation is enabled; and  
25 performing steps (B) and (C) only if the mode of operation enabling  
modification of the plurality of PMs during play mode of operation is enabled.
5. The method of claim 4, wherein the step of determining whether user  
modification of a PM is enabled is preceded by the step of determining whether the  
30 system is in play mode of operation.
6. The method of claim 5, wherein:

the system comprises a DVD player and the storage medium comprises a DVD disk;

the DVD disk includes a plurality of chapters; and

the plurality of playmodes represent respectively different sequences of chapters.

7. The method of claim 1, wherein step (B) comprises the steps of:

determining the maximum number of the plurality of PMs which may be performed with the storage medium;

10 determining which of the number of the maximum number of the plurality of PMs are actually possible with the storage medium;

generating an on-screen menu displaying the maximum number of the plurality of PMs, and which of the maximum number of the plurality of PMs are actually possible.

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8. The method of claim 7, wherein step (B) further comprises, after the generating step, a step of allowing the user to select from among the plurality of PMs actually possible on the storage medium.

20 9. The method of claim 1, wherein step (C) is preceded by the step of allowing the user to select if the selected PM will affect all future playbacks or just the current one.

10. The method of claim 9, wherein the PM comprises a standard PM representing a default sequence.

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11. The method of claim 10, wherein the PM comprises a random PM representing a random sequence.

30 12. The method of claim 11, wherein the PM comprises a programmable PM representing a sequence specified by a user.

13. Apparatus for processing information stored on a storage medium comprising:

a storage medium data processing unit for accessing information stored on the storage medium during a play mode of operation of the apparatus in a one of a plurality of playmodes (PMs) representing respectively different playback sequences; and

- 5 a control unit for conditioning the storage medium data processing unit to:
- activate the play mode of operation
  - provide to a user during the play mode of operation an opportunity to select from among the plurality of PMs by an on-screen display overlaid onto a video display which allows the user to select a
  - 10 PM while continuing to watch the playback sequence in a background portion of the video display, and
  - return the apparatus to the play mode of and remove the on-screen display overlaid onto the video and audio display subsequent to completion of playback of title.

15

14. Apparatus for processing information, including a plurality of playmodes (PMs) representing respectively different playback sequences, comprising:

playback circuitry for retrieving information from the storage medium during a play mode of operation in one of the plurality of PMs;

- 20 a user control device, coupled to playback circuitry, for receiving user input;
- control circuitry, coupled to user control device and the playback circuitry, for conditioning the playback circuitry to:

- assume a play mode of operation,
- select one of the plurality of PMs during the play mode of
- 25 operation in response to the user input, and
- change to retrieve information in the selected one of a plurality of PMs during the play mode of operation.

15. The apparatus of claim 14, further comprising:
- 30 an on-screen display control, coupled to the control circuitry; wherein:
- the control circuitry conditions on the on-screen display control to a display a menu representing the plurality of PMs before selecting one of the plurality of PMs.